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EXAMINER

WOOD, JONATHAN K

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,283	Applicant(s) MERABET ET AL.	
	Examiner JONATHAN WOOD	Art Unit 3754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 33 is objected to because of the following informalities: line 3 recites "sai8d" which appears to be a typographical error for the word "said". Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 19-23, 27-29 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,940,207 to *Katsuyama* (*Katsuyama*) in view of US Patent No. 3,348,543 to *Stafford* (*Stafford*).

Katsuyama shows a valve comprising a body (16) inside which a needle (4 to 13) capable of resting in a sealed manner against a seat (10) fixedly joined to the body (col. 7, ll. 41-42) is mobile (col. 11, ll. 1-3), the needle being coupled magnetically (col. 10, ll. 65-66), through a sealed and non-magnetic partition (18), to an actuating device (7) equipped with several magnets (6) between which magnetic bodies are interposed (14).

Katsuyama fails to disclose the valve needle not having magnets and instead equipped with ribs formed of a magnetic material. However, *Stafford* teaches a valve with a needle (50) which is controlled by a magnetic actuating device (60) (col. 2, ll. 36-40), wherein the needle does not have magnets (col. 2, ll. 46-48 and 51-56).

Katsuyama discloses the claimed invention except for that the valve needle utilizes magnets instead of magnetic material. *Stafford* shows that magnetic material is an equivalent structure to a permanent magnet when used to actuate a valve (col. 2, ll. 51-56). Therefore, because a magnet and magnetic material in the use of actuating a valve were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute rings of magnetic material for the ring magnets 3 in the valve needle of *Katsuyama*. The combination would result in the needle having ribs formed from a magnetic material.

Regarding claim 20, *Katsuyama* as modified by *Stafford* teaches a valve according to claim 19 wherein the thickness of the ribs of magnetic material is substantially equal to the thickness of the magnets of the actuating device (6). It would have been obvious to one having ordinary skill in the art at the time of the invention to have reversed the material of the rings 3 with the material of ring-like yokes 11, thereby making the thickness of the magnetic material ribs substantially equal to the thickness of the magnetic bodies (14), since it has been held that a mere reversal of the essential working parts of a device involved only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Regarding claim 21, *Katsuyama* as modified by *Stafford* teaches a valve according to claim 19, characterized in that the relative spacing of the ribs of magnetic material is substantially equal to, or corresponds substantially to, a multiple or a sub-multiple of the relative spacing of the magnets of the actuating device (6). It would have been obvious to one having ordinary skill in the art at the time of the invention to have reversed the material of rings 3 with the material of ring-like yokes 11, thereby making the relative spacing of the magnetic material ribs substantially equal to a multiple or a sub-multiple of the relative spacing of the bodies (14), since it has been held that a mere reversal of the essential working parts of a device involved only routine skill in the art. *In re Einstein*, 8 USPQ 167.

Regarding claim 22, *Katsuyama* as modified by *Stafford* shows the ribs are unitary with, and made of the same material as the body of the needle (*Katsuyama*, Figure 1) (The term “unitary” meaning ‘having the nature of a unit’ as defined by the

American Heritage Dictionary of the English Language) (The ribs and body of the needle are both made of metal).

Regarding claim 23, *Katsuyama* as modified by *Stafford* shows spaces provided between two adjacent ribs which are packed with non-magnetic filling material (*Katsuyama*, 11).

Regarding claim 27, *Katsuyama* as modified by *Stafford* shows the movements of the actuating device are controlled pneumatically (*Katsuyama*, col. 10, ll. 59-64).

Regarding claim 28, *Katsuyama* as modified by *Stafford* shows all aspects of applicant's invention as set forth in claim 1, but does not disclose the actuating device being controlled mechanically. However, *Stafford* further discloses a valve with magnetic coupling means wherein the actuating device (60) is controlled mechanically (col. 2, ll. 42-45). It would have been obvious to one having ordinary skill in the art at the time of the invention, under the teachings of *Stafford*, to have manufactured the valve of *Katsuyama* as modified by *Stafford* with the additional mechanical control means of the actuating device of *Stafford* in order to provide a manual override to the valve system in the event of pneumatic system failure.

Regarding claim 29, *Katsuyama* as modified by *Stafford* shows the sealed partition being cylindrical, the needle being located inside the partition, and the actuating device being arranged around the partition (*Katsuyama*, Figure 1).

Regarding claim 33, *Katsuyama* as modified by *Stafford* shows an installation comprising at least one projector (*Katsuyama*, 16 with 25) and at least one source of coating product (*Katsuyama*, supply source, col. 9, line 49), characterized in that it

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comprises at least one valve according to claim 1 (see rejection of claim 1 above), located in the line (*Katsuyama*, Figure 1) for supplying coating product or cleaning product to the discharge opening (*Katsuyama*, 1A) of the projector.

Regarding claim 34, *Katsuyama* as modified by *Stafford* shows the valve integrated in the projector (*Katsuyama*, Figure 1).

6. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Katsuyama* in view of *Stafford* as applied to claim 1 above, and further in view of US Patent No. 5,942,962 to *Gery* (*Gery*).

Katsuyama as modified by *Stafford* shows all aspects of applicant's invention as set forth in claim 1, and further shows the partition being flat overall (*Katsuyama*, Figure 1). *Katsuyama* as modified by *Stafford* fails to disclose the ribs and magnetic bodies being provided with guide means in the form of cavities in the adjacent surfaces of the two. However, *Gery* teaches a dipole magnetic structure which has two adjacent magnets (18 and 19) which are attracted to each other across a non-magnetic partition (14), wherein the magnets have cavities (col. 3, ll. 14-18). It would have been obvious to one having ordinary skill in the art at the time of the invention, under the teachings of *Gery*, to have manufactured the adjacently attracted magnetic bodies and ribs of *Katsuyama* as modified by *Stafford* with cavities like those of *Gery* in order to direct the flux emanating from the periphery back toward the center of the magnetic field (*Gery*, col. 3, ll. 25-35). The cavities serve to strengthen the attraction between two bodies and thus would serve as enhanced guide means for the needle in translation with the actuating device.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Katsuyama* in view of *Stafford* as applied to claim 1 above, and further in view of US Patent No. 4,520,961 to *Hueber* (*Hueber*).

Katsuyama as modified by *Stafford* shows all aspects of applicant's invention as set forth in claim 1, but fails to disclose the valve needle covered with a layer of anti-corrosion material. However, *Hueber* discloses a valve needle (45) of iron having an anti-corrosion coating (col. 8, ll. 3-5). It would have been obvious to one having ordinary skill in the art at the time of the invention, under the teachings of *Hueber*, to have manufactured the valve needle of *Katsuyama* as modified by *Stafford* with an anti-corrosion coating in order to protect the valve needle from corrosive liquids.

8. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Katsuyama* in view of *Stafford* as applied to claim 1 above, and further in view of US Patent No. 2,572,692 to *Bottum* (*Bottum*).

Regarding claim 30, *Katsuyama* as modified by *Stafford* shows all aspects of applicant's invention as set forth in claim 1, but fails to disclose the valve having an element coupled magnetically to the actuating device located outside the body and mobile in translation between two positions in which it indicates the open state and the closed state, respectively, of the valve. However, *Bottum* teaches a valve (valve, col. 1, line 3) which has an element (64) located outside the body of the valve (40) and mobile in translation between two positions of the valve ("high" and "low", col. 6, ll. 49-53). It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated the teaching of *Bottum* of utilizing a mobile indicating

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element outside the body of the valve in order to signal to the user the valve's operating status in the valve of *Katsuyama* as modified by *Stafford*. When applying the teaching of *Bottum* to the valve of *Katsuyama* as modified by *Stafford*, the coupling means of the element to the body of the valve would require the use of the valve actuating means. In the case of *Bottum*, these means are a screw attachment. In *Katsuyama* as modified by *Stafford*, the valve actuating means involves the use of magnets; hence a magnetic coupling of the indicating element would be obvious. The use of specific indicator words such as "high" and "low" or "open" and "close" are replaceable equivalents of each other.

Regarding claim 31, *Katsuyama* as modified by *Stafford* and *Bottum* shows all aspects of applicant's invention as set forth in claim 30 and further shows the body provided with two marks (*Bottum*, "high" and "low", col. 6, ll. 49-53) corresponding to the closed state and the open state, respectively, of the valve (see above). *Katsuyama* as modified by *Stafford* and *Bottum* fails to disclose the indicating element being capable of masking selectively one of the marks while leaving the other mark visible, or vice versa. It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized a masking element instead of simply pointing tips for the indicating element since examiner takes Official Notice of the equivalence of the two for their use in the indicator art and the selection of any of these known equivalents to indicate the operating status of the valve would be within the level of ordinary skill in the art.

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9. Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Katsuyama* in view of *Stafford* and *Bottum* and as applied to claims 30 and 31 above, and further in view of US Patent No. 4,881,088 to *Fisher, Jr. et al. (Fisher)*.

Katsuyama as modified by *Stafford* and *Bottum* shows all aspects of applicant's invention as set forth in claims 30 and 31, but does not disclose the valve having a sensor capable of detecting the movements of the element and of supplying to a monitoring system a signal representative of the open or closed state of the valve. However, *Fisher* teaches a dispensing device which uses a sensor (46) to detect a magnet or magnet-attracting material coming into proximity to the sensor and subsequently sending a signal to a monitoring system (60) representative of the status of the device (col. 3, ll. 43-64). It would have been obvious to one having ordinary skill in the art at the time of the invention to have manufactured the valve of *Katsuyama* as modified by *Stafford* and *Bottum* with the sensor and corresponding monitoring system as taught by *Fisher* in order to update the user on the device's status. The status of the device in the case of the valve would be determining if it is open or closed. The sensor would be triggered by the indicating element on the exterior of the valve body since it is inherently a magnet attracting material.

Response to Arguments

10. Applicant's arguments filed 5/5/2009 have been fully considered but they are not persuasive.

Regarding claim 19, applicant correctly notes that *Katsuyama* utilizes a needle with magnets while applicant's invention specifically states that the needle does not

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have any magnets. However, by combining the teaching of *Stafford* that magnetic material is an equivalent structure to a permanent magnet when used to actuate a valve (col. 2, ll. 46-48 and 51-53) with the structure of *Katsuyama*, one of ordinary skill in the art would come to applicant's invention of claim 19. Specifically, the combination would yield a simple substitution of the ring magnets 3 of *Katsuyama* with rings of magnetic material, as these two items are recognized as equivalents by *Stafford*. Regarding applicant's statement that *Stafford* only discloses the use of one magnetic coupling while *Katsuyama* and applicant's invention disclose several, the combination is not addressing the structural teachings of the valve of *Stafford*, but simply the practice of using a magnetic material as an acceptable alternative to a permanent magnet, and therefore this teaching could be applied to any number of magnets. Further, applicant contends on page 8 that *Katsuyama* as modified by *Stafford* does not teach the needle having ribs of magnetic material. However, the structure and orientation of rings 3 in *Katsuyama* inherently makes them ribs of the needle. A rib is simply an extension of something and the ribs extend from the bolt 12 of *Katsuyama*. Therefore, *Katsuyama* as modified by *Stafford* teaches ribs of magnetic material.

Regarding claims 20 and 21, applicant again contends that *Stafford* only discloses the use of one magnetic coupling while *Katsuyama* and applicant's invention disclose several, therefore the combination cannot be done. However, the combination is not addressing the structural teachings of the valve of *Stafford*, but simply the practice of using a magnetic material as an acceptable alternative to a permanent magnet, and

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therefore this teaching could be applied to any number of magnets and the resulting geometric relationships taught using the cited case law.

Regarding claim 22, applicant argues that the magnets 3 and yokes 11 must be made of a different material and therefore cannot form a uniform body. Examiner reminds applicant that *Katsuyama* as modified by *Stafford* discloses the rings 3 be made of a magnetic material and not magnets. Further, claim 22 states that the ribs are unitary and made of the same material as the body of the needle, which would incorporate portions 4, 12, and 13. Yokes 11 are filling material equivalent to applicant's 37, and not part of the needle body. Further, the term "unitary" means "having the nature of a unit" and since the entire needle moves together as a unit, examiner argues that the ribs are in fact unitary with the body of the needle.

Regarding claim 23, applicant argues that yokes associated with magnets would be made of magnetic material. However, examiner reminds applicant that *Katsuyama* as modified by *Stafford* discloses the rings 3 be made of a magnetic material and not magnets. Therefore, applicant's argument is moot.

Regarding claims 24 and 25, in response to applicant's argument that *Gery* is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, *Gery* is concerned with providing an increased attraction between two magnetic bodies through a partition. Applicant is concerned with providing

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an increased attraction between the needle and actuating device (2 magnetic bodies) through a partition. Therefore, the prior art reference is considered pertinent to a particular problem with which the applicant is concerned.

Regarding claim 26, in response to applicant's argument that *Hueber* is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, *Hueber* is concerned with protecting a slide valve of iron from corrosion. Applicant is concerned with protecting a sliding valve needle of metal from corrosion. Therefore, the prior art reference is considered pertinent to a particular problem with which the applicant is concerned. The actuation method of *Hueber* is irrelevant to the teaching of providing an anti-corrosion coating.

Regarding claims 30 and 31, applicant argues that one of ordinary skill would not arrive at claim 30 given the technical teaching of *Bottum*. However, examiner argues that one of ordinary skill in the art would identify that the indicating device of *Bottum* is coupled to the actuation device in the same way that the valve is coupled to the actuation device (*Bottum*, col. 6, ll. 56-71). Therefore, when incorporating the teaching of *Bottum* to incorporate an indicating device on the exterior body of a valve with the device of *Katsuyama* as modified by *Stafford*, one of ordinary skill would look to a similar coupling method. In the case of *Katsuyama* as modified by *Stafford*, the valve is magnetically coupled to the actuation device, and therefore one of ordinary skill in the

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art would magnetically couple the indicating device to the actuation device if he/she were following the coupling logic taught by *Bottum*.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN WOOD whose telephone number is (571)270-7422. The examiner can normally be reached on Monday through Friday, 7:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571)272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JKW/

Examiner, Art Unit 3754

/Kevin P. Shaver/

Supervisory Patent Examiner, Art Unit 3754